IN THE CLAIMS:

Please amend the claims as follows:

Claim 1 (Currently Amended): A laser beam machining method comprising ~~a step of~~:

irradiating laser light to a machining target while converging the light to the inside of the machining target, thereby forming a treated area based on multiphoton absorption in the machining target along a planned cutting line of the machining target and ~~form~~ forming a minute cavity at a predetermined position in connection with the treated area in the machining target, wherein

the treated area is a molten processed area,

the laser light is a pulsed laser light,

a pair comprising the treated area and the minute cavity is formed by irradiating at least 1 pulse of the laser light, the laser light being relatively moved along the planned cutting line, thereby forming a plurality of pairs along the planned cutting line, and

each of the minute cavities are separated by a predetermined distance along the planned cutting line.

Claim 2 (Currently Amended): The laser beam machining method according to Claim 1, further comprising ~~a step of~~ setting the planned cutting line.

Claim 3 (Currently Amended): A laser beam machining method comprising:

~~a step in which~~ setting a planned cutting line of a machining target; and

~~a step in which~~ irradiating laser light to the machining target while converging the light to the inside of the machining target, thereby forming a treated area based on multiphoton absorption in the machining target along the planned cutting line and ~~form~~ forming a minute cavity at a predetermined position in connection with the treated area in the machining target, wherein

the treated area is a molten processed area,

the laser light is a pulsed laser light,

a pair comprising the treated area and the minute cavity is formed by irradiating at least 1 pulse of the laser light, the laser light being relatively moved along the planned cutting line, thereby forming a plurality of pairs along the planned cutting line, and

each of the minute cavities are separated by a predetermined distance along the planned cutting line.

Claim 4 (Canceled).

Claim 5 (Currently Amended): The laser beam machining method according to Claim 1, wherein the machining target is a semiconductor substrate, and ~~the laser light is a pulse laser light which~~ a pulse width is set to 500 nsec or less.

Claim 6 (Currently Amended): The laser beam machining method according to Claim 1, wherein the machining target is a semiconductor substrate, and ~~the laser light is a pulse laser light which~~ a pulse pitch is set to 1.00 μm to 7.00 μm.

Claim 7 (Canceled).

Claim 8 (Canceled).

Claim 9 (Previously Presented): The laser beam machining method according to Claim 1, wherein a functional element is formed on a principle surface of the machining target, and the minute cavity is located between the principle surface and the treated area.

Claim 10 (Currently Amended): The laser beam machining method according to Claim 1, wherein ~~the minute cavity is formed the other side of the laser light incidence, putting~~ the treated area is between the minute cavity and ~~them~~ a laser light incident face of the machining target.

Claim 11 (Currently Amended): The laser beam machining method according to Claim 1, further comprising ~~a step of~~ cutting the machining target which is formed with the minute cavity.

Claim 12 (Currently Amended): A laser beam machining method comprising:

~~a step in which~~ setting a planned cutting line of a semiconductor substrate; and

~~a step in which~~ irradiating laser light to the semiconductor substrate while converging the light to the inside of the semiconductor substrate, thereby forming a molten processed area in the semiconductor substrate along the planned cutting line and ~~form~~ forming a minute cavity at a predetermined position in connection with the molten processed area in the semiconductor substrate, wherein

the laser light is a pulsed laser light,

a pair comprising the molten processed area and the minute cavity is formed by irradiating at least 1 pulse of the laser light, the laser light being relatively moved along the planned cutting line, thereby forming a plurality of pairs along the planned cutting line, and

each of the minute cavities are separated by a predetermined distance along the planned cutting line.

Claim 13 (Currently Amended): A laser beam machining method comprising:

~~a step in which~~ setting a planned cutting line of a semiconductor substrate; and

~~a step in which~~ irradiating laser light to the semiconductor substrate while converging the light to the inside of the semiconductor substrate, thereby forming a molten processed area in the semiconductor substrate along the planned cutting line and ~~form~~ forming a minute cavity at a predetermined position in connection with the molten processed area in the semiconductor

substrate, ~~and~~ the laser light ~~is~~ being a pulse laser light in which a pulse width is set to 500 nsec or less, wherein

a pair comprising the molten processed area and the minute cavity is formed by irradiating at least 1 pulse of the laser light, the laser light being relatively moved along the planned cutting line, thereby forming a plurality of pairs along the planned cutting line, and

each of the minute cavities are separated by a predetermined distance along the planned cutting line.

Claim 14 (Currently Amended): A laser beam machining method comprising:

~~a step in which~~ setting a planned cutting line of a semiconductor substrate; and

~~a step in which~~ irradiating laser light to the semiconductor substrate while converging the light to the inside of the semiconductor substrate, thereby forming a molten processed area in the semiconductor substrate along the planned cutting line and ~~form~~ forming a minute cavity at a predetermined position in connection with the molten processed area in the semiconductor substrate, ~~and~~ the laser light ~~is~~ being a pulse laser light in which a pulse pitch is set to 1.00 μm to 7.00 μm, wherein

a pair comprising the molten processed area and the minute cavity is formed by irradiating at least 1 pulse of the laser light, the laser light being relatively moved along the planned cutting line, thereby forming a plurality of pairs along the planned cutting line, and

each of the minute cavities are separated by a predetermined distance along the planned cutting line.

Claim 15 (Canceled).

Claim 16 (Currently Amended): The laser beam machining method according to Claim 12, wherein a functional element is formed on a principle surface of the semiconductor substrate, and the minute cavity is located between the principle surface and the ~~treated~~ molten processed area.

Claim 17 (Currently Amended): The laser beam machining method according to Claim 12, wherein ~~the minute cavity is formed the other side of the laser light incidence, putting~~ the molten processed area is between the minute cavity and ~~them~~ a laser light incident face of the semiconductor substrate.

Claim 18 (Currently Amended): The laser beam machining method according to Claim 12, further comprising ~~a step of~~ cutting the machining target which is formed with the minute cavity.

Claim 19 (Currently Amended): A laser beam machining apparatus comprising:

a laser light source, a mount table for mounting a machining target, and a controller for controlling a relative position of the laser light source and the mount table[[:]].

wherein the controller ~~control~~ controls the relative position of the laser light source and the mount table while converging the laser light to the inside of the machining target, and the controller ~~move~~ moves the laser light source and the mount table relatively along a planned cutting line,

thereby forming a treated area based on multiphoton absorption in the machining target along the planned cutting line and ~~form~~ forming a minute cavity at a predetermined position in connection with the treated area in the machining target, wherein

the treated area is a molten processed area,

the laser light is a pulsed laser light,

a pair comprising the treated area and the minute cavity is formed by irradiating at least 1 pulse of the laser light, the laser light being relatively moved along the planned cutting line, thereby forming a plurality of pairs along the planned cutting line, and

each of the minute cavities are separated by a predetermined distance along the planned cutting line.

Claim 20 (Currently Amended): A laser beam machining apparatus comprising:

a laser light source, a mount table for mounting a semiconductor substrate, and a controller for controlling a relative position of the laser light source and the mount table[[:]],

wherein the controller ~~control~~ controls the relative position of the laser light source and the mount table while converging the laser light to the inside of the semiconductor substrate, and

the controller move the laser light source and the mount table relatively along a planned cutting line,

thereby forming a molten processed area in the semiconductor substrate along the planned cutting line and ~~form~~ forming a minute cavity at a predetermined position in connection with the molten processed area in the semiconductor substrate, wherein

the laser light is a pulsed laser light,

a pair comprising the molten processed area and the minute cavity is formed by irradiating at least 1 pulse of the laser light, the laser light being relatively moved along the planned cutting line, thereby forming a plurality of pairs along the planned cutting line, and

each of the minute cavities are separated by a predetermined distance along the planned cutting line.

Claim 21 (Currently Amended): A laser beam machining apparatus comprising:

a laser light source, a mount table for mounting a semiconductor substrate, and a controller for controlling a relative position of the laser light source and the mount table[[:]],

wherein the controller ~~control~~ controls the relative position of the laser light source and the mount table while converging the laser light to the inside of the semiconductor substrate, and the controller ~~move~~ moves the laser light source and the mount table relatively along a planned cutting line,

thereby forming a molten processed area in the semiconductor substrate along the planned cutting line and ~~form~~ forming a minute cavity at a predetermined position in connection

with the molten processed area in the semiconductor substrate, ~~and~~ the laser light ~~is~~ being a pulse laser light in which a pulse width is set to 500 nsec or less, wherein

a pair comprising the molten processed area and the minute cavity is formed by irradiating at least 1 pulse of the laser light, the laser light being relatively moved along the planned cutting line, thereby forming a plurality of pairs along the planned cutting line, and

each of the minute cavities are separated by a predetermined distance along the planned cutting line.

Claim 22 (Currently Amended): A laser beam machining apparatus comprising:

a laser light source, a mount table for mounting a semiconductor substrate, and a controller for controlling a relative position of the laser light source and the mount table[[:]],

wherein the controller ~~control~~ controls the relative position of the laser light source and the mount table while converging the laser light to the inside of the semiconductor substrate, and the controller ~~move~~ moves the laser light source and the mount table relatively along a planned cutting line,

thereby forming a molten processed area in the semiconductor substrate along the planned cutting line and ~~form~~ forming a minute cavity at a predetermined position in connection with the molten processed area in the semiconductor substrate, ~~and~~ the laser light ~~is~~ being a pulse laser light in which a pulse pitch is set to 1.00 μm to 7.00 μm, wherein

a pair comprising the molten processed area and the minute cavity is formed by irradiating at least 1 pulse of the laser light, the laser light being relatively moved along the planned cutting line, thereby forming a plurality of pairs along the planned cutting line, and

each of the minute cavities are separated by a predetermined distance along the planned cutting line.

Claim 23 (Canceled).

Claim 24 (Currently Amended): A laser beam machined product obtained by cutting a machining target by laser beam machining, comprising:

a treated area which is modified with multiphoton absorption and formed at a portion along a principal face formed by the cutting; and

a minute cavity having an opening portion formed at a predetermined position which is located on the principal face formed by cutting and corresponds to the treated area, wherein

the treated area is a molten processed area,

the laser light is a pulsed laser light,

a pair comprising the treated area and the minute cavity is formed by irradiating at least 1 pulse of the laser light, the laser light being relatively moved along a planned cutting line, thereby forming a plurality of pairs along the planned cutting line, and

each of the minute cavities are separated by a predetermined distance along the planned cutting line.

Claim 25 (Canceled).

Claim 26 (Canceled).

Claim 27 (Currently Amended): The laser beam machined product according to Claim ~~26~~ 24, wherein an interval ~~of~~ between the minute cavities is 1.00 μm to 7.00 μm.

Claim 28 (Currently Amended): The laser beam machined product according to Claim ~~26~~ 24, wherein the treated area is formed in a first zone along the planned cutting line, and the minute cavities are formed in a second zone separated from the first zone.

Claim 29 (Currently Amended): A laser beam machining method comprising ~~a step of~~:

irradiating laser light to a machining target while converging the light to the inside of the machining target, thereby forming a treated region which includes a treated area in the machining target along a planned cutting line of the machining target and ~~form~~ forming a minute cavity region which includes a minute cavity along at least one part of the planned cutting line, wherein

the treated area is a molten processed area,

the laser light is a pulsed laser light,

a pair comprising the treated area and the minute cavity is formed by irradiating at least 1 pulse of the laser light, the laser light being relatively moved along the planned cutting line, thereby forming a plurality of pairs along the planned cutting line, and

each of the minute cavities are separated by a predetermined distance along the planned cutting line.

Claim 30 (Canceled).

Claim 31 (Currently Amended): A laser beam machined product obtained by cutting a machining target by laser beam machining, comprising:

a treated region which includes a treated area which is formed at a portion along a principal face formed by the cutting; and

a minute cavity region which includes a minute cavity having an opening portion formed at a predetermined position which is located on the principal face formed by cutting, wherein

the treated area is a molten processed area,

the laser light is a pulsed laser light,

a pair comprising the treated area and the minute cavity is formed by irradiating at least 1 pulse of the laser light, the laser light being relatively moved along a planned cutting line, thereby forming a plurality of pairs along the planned cutting line, and

each of the minute cavities are separated by a predetermined distance along the planned cutting line.

Claim 32 (Canceled).

Claim 33 (Currently Amended): A method of manufacturing a semiconductor device formed using a laser beam machining method, the manufacturing method comprising:

irradiating laser light to a machining target, the machining target comprising semiconductor material and having a surface formed with at least one semiconductor device, while converging the light to the inside of the machining target, thereby forming a treated area based on multiphoton absorption in the machining target along a planned cutting line of the machining target, and forming a minute cavity at a predetermined position in connection with the treated area in the machining target, to facilitate cutting of the machining target along the planned cutting line in order to provide at least one manufactured semiconductor device, wherein

the treated area is a molten processed area,

the laser light is a pulsed laser light,

a pair comprising the treated area and the minute cavity is formed by irradiating at least 1 pulse of the laser light, the laser light being relatively moved along the planned cutting line, thereby forming a plurality of pairs along the planned cutting line, and

each of the minute cavities are separated by a predetermined distance along the planned cutting line.

Claim 34 (Currently Amended): A method of manufacturing a semiconductor device formed using a laser beam machining method, the manufacturing method comprising:

~~a step of~~ setting a planned cutting line of a machining target, the machining target comprising semiconductor material and having a surface formed with at least one semiconductor device; and

~~a step of~~ irradiating laser light to the machining target while converging the light to the inside of the machining target, thereby forming a treated area based on multiphoton absorption in the machining target along the planned cutting line, and forming a minute cavity at a predetermined position in connection with the treated area in the machining target, to facilitate cutting of the machining target along the planned cutting line in order to provide at least one manufactured semiconductor device, wherein

the treated area is a molten processed area,

the laser light is a pulsed laser light,

a pair comprising the treated area and the minute cavity is formed by irradiating at least 1 pulse of the laser light, the laser light being relatively moved along the planned cutting line, thereby forming a plurality of pairs along the planned cutting line, and

each of the minute cavities are separated by a predetermined distance along the planned cutting line.

Claim 35 (Currently Amended): A method of manufacturing a semiconductor device formed using a laser beam machining method, the manufacturing method comprising:

~~a step of~~ setting a planned cutting line of a semiconductor substrate, the semiconductor substrate having a surface formed with at least one semiconductor device; and

~~a step of~~ irradiating laser light to the semiconductor substrate while converging the light to the inside of the semiconductor substrate, thereby forming a molten processed area in the semiconductor substrate along the planned cutting line, and forming a minute cavity at a predetermined position in connection with the molten processed area in the semiconductor substrate, to facilitate cutting of the semiconductor substrate along the planned cutting line in order to provide at least one manufactured semiconductor device, wherein

the laser light is a pulsed laser light,

a pair comprising the molten processed area and the minute cavity is formed by irradiating at least 1 pulse of the laser light, the laser light being relatively moved along the planned cutting line, thereby forming a plurality of pairs along the planned cutting line, and

each of the minute cavities are separated by a predetermined distance along the planned cutting line.

Claim 36 (Currently Amended): A method of manufacturing a semiconductor device formed using a laser beam machining method, the manufacturing method comprising:

~~a step of~~ setting a planned cutting line of a semiconductor substrate, the semiconductor substrate having a surface formed with at least one semiconductor device; and

~~a step of~~ irradiating laser light to the semiconductor substrate while converging the light to the inside of the semiconductor substrate, thereby forming a molten processed area in the semiconductor substrate along the planned cutting line, and forming a minute cavity at a predetermined position in connection with the molten processed area in the semiconductor substrate, wherein the laser light is a pulse laser light in which a pulse width is set to 500 nsec or

less, to facilitate cutting of the semiconductor substrate along the planned cutting line in order to provide at least one manufactured semiconductor device, wherein

a pair comprising the molten processed area and the minute cavity is formed by irradiating at least 1 pulse of the laser light, the laser light being relatively moved along the planned cutting line, thereby forming a plurality of pairs along the planned cutting line, and

each of the minute cavities are separated by a predetermined distance along the planned cutting line.

Claim 37 (Currently Amended): A method of manufacturing a semiconductor device formed using a laser beam machining method, the manufacturing method comprising:

~~a step of~~ setting a planned cutting line of a semiconductor substrate, the semiconductor substrate having a surface formed with at least one semiconductor device, with laser light while locating a light-converging point within the object; and

~~a step of~~ irradiating laser light to the semiconductor substrate while converging the light to the inside of the semiconductor substrate, thereby forming a molten processed area in the semiconductor substrate along the planned cutting line, and forming a minute cavity at a predetermined position in connection with the molten processed area in the semiconductor substrate, wherein the laser light is a pulse laser light in which a pulse pitch is set to 1.00 μm to 7.00 μm, to facilitate cutting of the semiconductor substrate along the planned cutting line in order to provide at least one manufactured semiconductor device, wherein

a pair comprising the molten processed area and the minute cavity is formed by irradiating at least 1 pulse of the laser light, the laser light being relatively moved along the planned cutting line, thereby forming a plurality of pairs along the planned cutting line, and

each of the minute cavities are separated by a predetermined distance along the planned cutting line.

Claim 38 (Currently Amended): A method of manufacturing a semiconductor device formed using a laser beam machining method, the manufacturing method comprising:

irradiating laser light to a machining target, the machining target comprising semiconductor material and having a surface formed with at least one semiconductor device, while converging the light to the inside of the machining target, thereby forming a treated region which includes a treated area in the machining target along a planned cutting line of the machining target, and forming a minute cavity region which includes a minute cavity along at least one part of the planned cutting line, to facilitate cutting of the machining target along the planned cutting line in order to provide at least one manufactured semiconductor device, wherein

the treated area is a molten processed area,

the laser light is a pulsed laser light,

a pair comprising the treated area and the minute cavity is formed by irradiating at least 1 pulse of the laser light, the laser light being relatively moved along the planned cutting line, thereby forming a plurality of pairs along the planned cutting line, and

each of the minute cavities are separated by a predetermined distance along the planned cutting line.

Claim 39 (New): The method according to any one of claims 1, 3, 12-14, 29, and 33-38, wherein the molten processed area is at least one of an area which has been melted and then re-solidified, an area under a melting condition, and an area which was melted and is being re-solidified.

Claim 40 (New): The apparatus according to any one of claims 19-22, wherein the molten processed area is at least one of an area which has been melted and then re-solidified, an area under a melting condition, and an area which was melted and is being re-solidified.

Claim 41 (New): The product according to any one of claims 24 and 31, wherein the molten processed area is at least one of an area which has been melted and then re-solidified, an area under a melting condition, and an area which was melted and is being re-solidified.

Claim 42 (New): The method according to any one of claims 1, 3, 12-14, 29, and 33-38, wherein the molten processed area is a phase-varied area or a crystal-structure varied area.

Claim 43 (New): The apparatus according to any one of claims 19-22, wherein the molten processed area is a phase-varied area or a crystal-structure varied area.

Claim 44 (New): The product according to any one of claims 24 and 31, wherein the molten processed area is a phase-varied area or a crystal-structure varied area.

Claim 45 (New): The method according to any one of claims 1, 3, 12-14, 29, and 33-38, wherein the molten processed area is an area in which one of a monocrystal structure, an amorphous structure, and a polycrystal structure is varied with another structure.

Claim 46 (New): The apparatus according to any one of claims 19-22, wherein the molten processed area is an area in which one of a monocrystal structure, an amorphous structure, and a polycrystal structure is varied with another structure.

Claim 47 (New): The product according to any one of claims 24 and 31, wherein the molten processed area is an area in which one of a monocrystal structure, an amorphous structure, and a polycrystal structure is varied with another structure.